

**WE CLAIM:**

1. A method of treating acute and chronic myeloid leukemia (AML & CML) and lymphoid leukemia, said method comprising administering a pharmaceutical composition comprising pharmaceutically effective amount of chlorogenic acid (CA) and 3-o-p-Coumaryl quinic acid (PCQ) isolated from any plant parts of *Piper betel* or any other source, both individually or in a synergistic combination optionally along with pharmaceutically acceptable additives.
2. A method as claimed in claim 1, wherein, CA and PCQ both are isolated from any plant parts of *Piper betel* or are synthetically prepared.
3. A method as claimed in claim 1, wherein the subject is selected from a mammal preferably a human being.
4. A method as claimed in claim 1, wherein, the additive is selected from a group consisting of nutrients such as proteins, carbohydrates, sugars, talc, magnesium stearate, cellulose, calcium carbonate, starch-gelatin paste and/or pharmaceutically acceptable carriers, excipient, diluents or solvents.
5. A method as claimed in claim 1, wherein ratio of CA and PCQ present in the composition ranging from 1:0 to 1:10, preferably 1:1.
6. A method as claimed in claim 1, wherein the said composition is administered through oral, intravenous, intramuscular or subcutaneous routes.
7. A method as claimed in claim 1, wherein said composition is administered at dose levels between 1 to 50 mg per kg body weight at least once in a day.
8. A method as claimed in claim 1, wherein the percentage growth inhibition of Erythroleukemia cells is about 30% with CA.
9. A method as claimed in claim 1, wherein the percentage growth inhibition of Erythroleukemia cells is about 8% with PCQ.

10. A method as claimed in claim 1, wherein the percentage growth inhibition of Erythroleukemia cells is about 50% with CA and PCQ as synergistic combination.
11. A method as claimed in claim 1 wherein, wherein the percentage growth inhibition of promonocyte cells is about 25% with CA.
12. A method as claimed in claim 1 wherein, wherein the percentage growth inhibition of promonocyte cells is about 5% with PCQ.
13. A method as claimed in claim 1, wherein the percentage growth inhibition of promonocyte cells is about 55% with CA and PCQ as synergistic combination.
14. A method as claimed in claim 1 wherein, wherein the percentage growth inhibition of CML's leukemic cells is about 5% with CA.
15. A method as claimed in claim 1 wherein, wherein the percentage growth inhibition of CML's leukemic cells is about 5% with PCQ.
16. A method as claimed in claim 1, wherein the percentage growth inhibition of CML's leukemic cells is about 25% with CA and PCQ as synergistic combination.
17. A method as claimed in claim 1, wherein the percentage inhibition of leukemic cells with increase in the concentration and time duration of exposure to CA and PCQ.
18. A method as claimed in claim 1, wherein the percentage inhibition is 85 to 100% with CA in about 3 days.